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WO 2003/088690 A1 **WO 2003/015430 A1**
WO 2000/044151 A2 **US 20020077130 A1**

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INT CL⁷ **H04M, H04Q**
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(54) Abstract Title: **Insertion of additional information into SMS/MMS messages**

(57) An SMS (short message service) or MMS (multimedia message service) is created by a mobile device user for transmission to another mobile device user. After the message is sent it is routed to a network node where additional information (such as an advertisement) is added to the message before it is transmitted to the receiving party. Users can subscribe to this service and have a profile created by the providers to enable appropriate advertisements to be received. Additionally, the type of advertisement can be linked to keywords used in the original message and/or the current location of the receiver of the message.

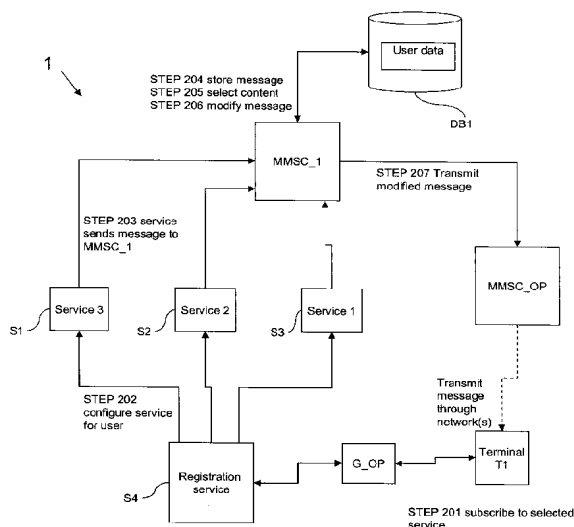


FIG. 2

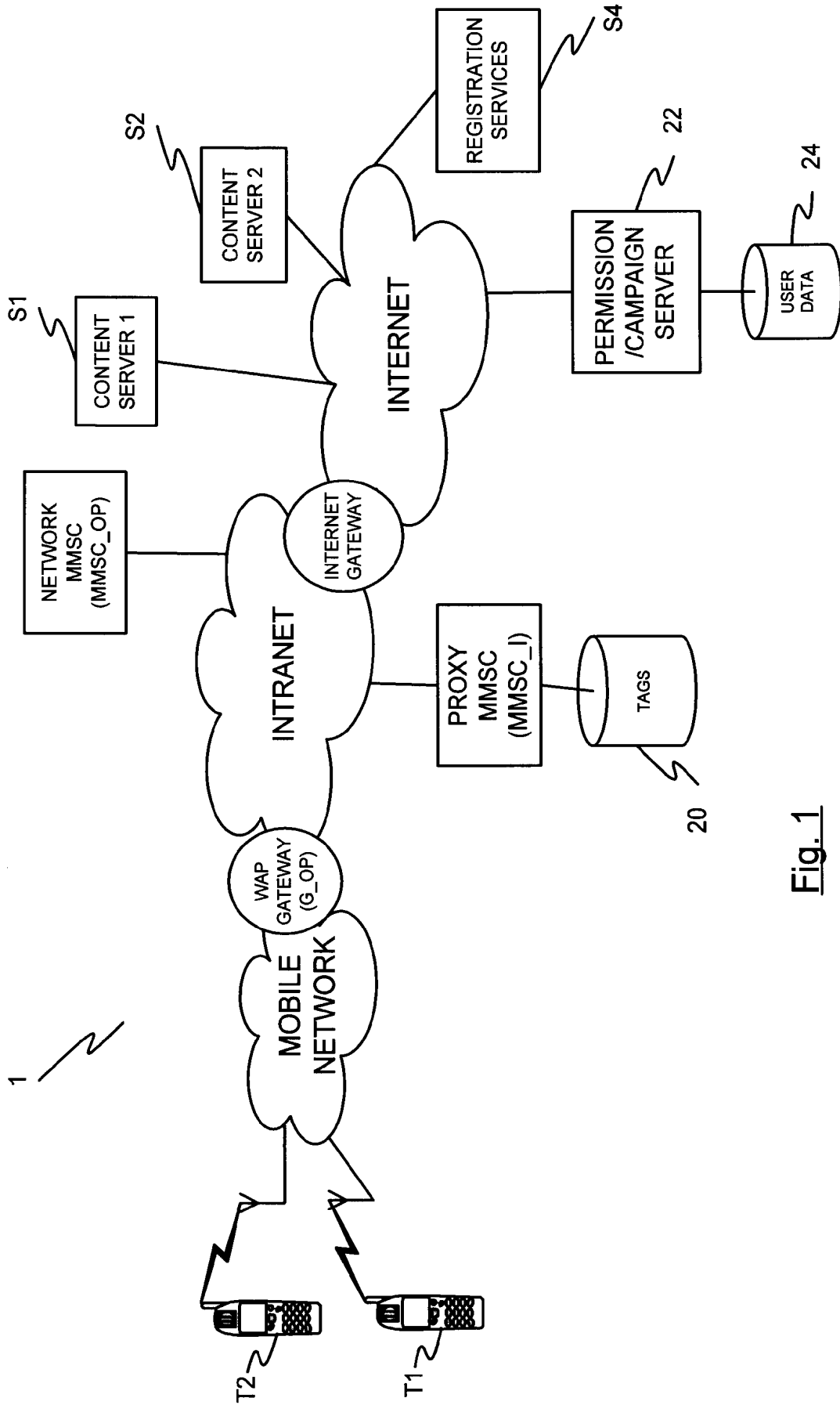
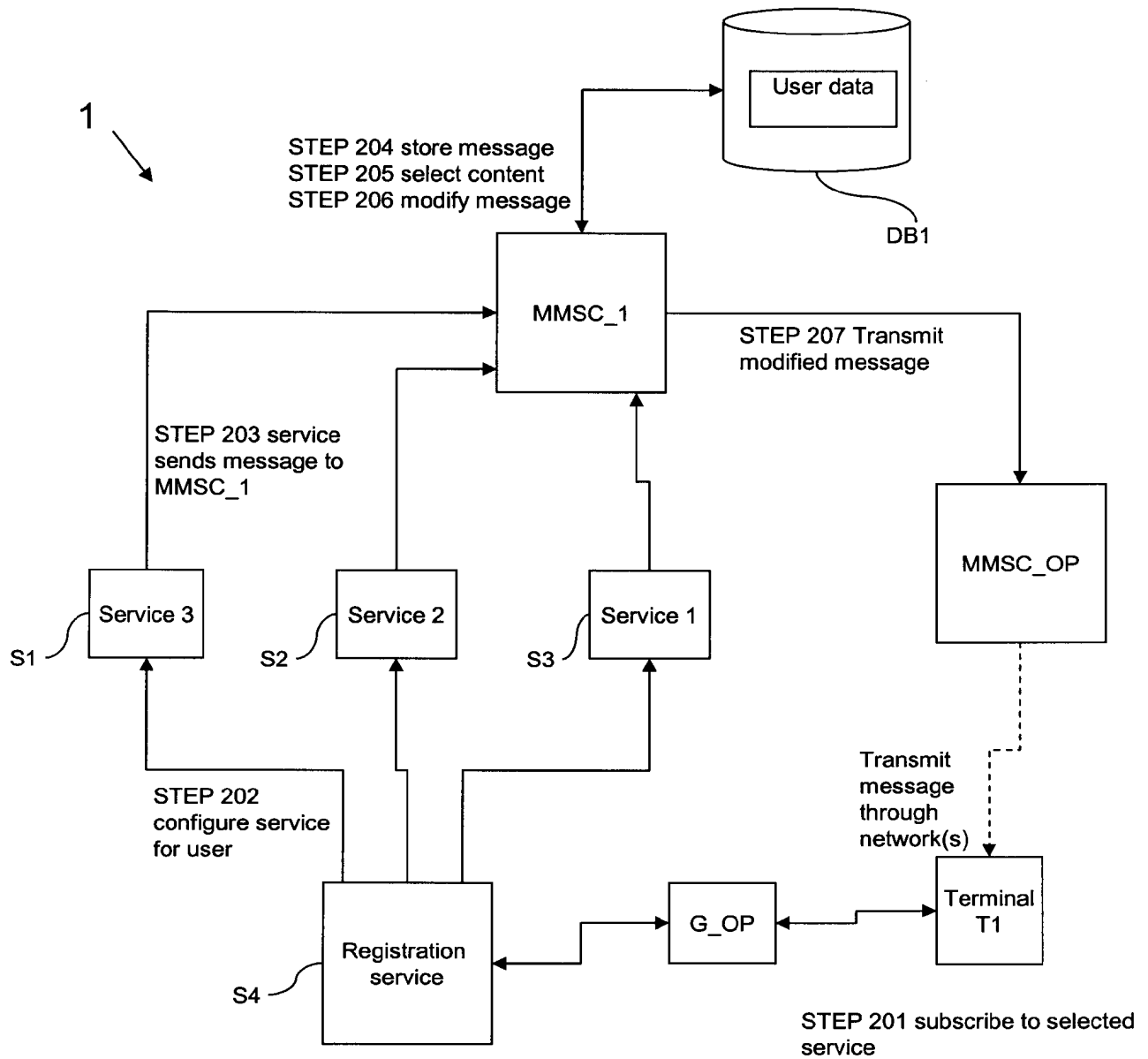
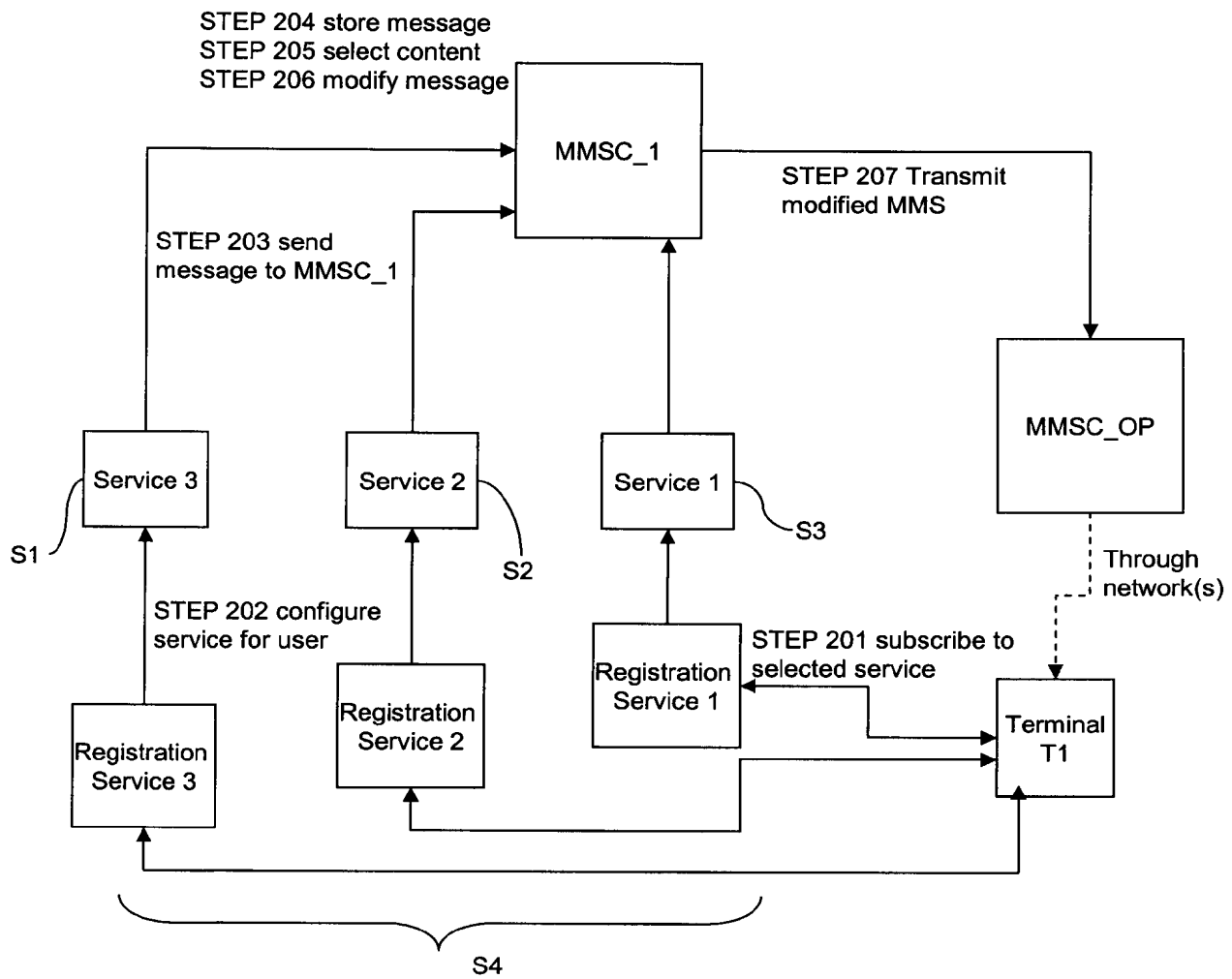


Fig. 1

FIG. 2

1
↓FIG. 3

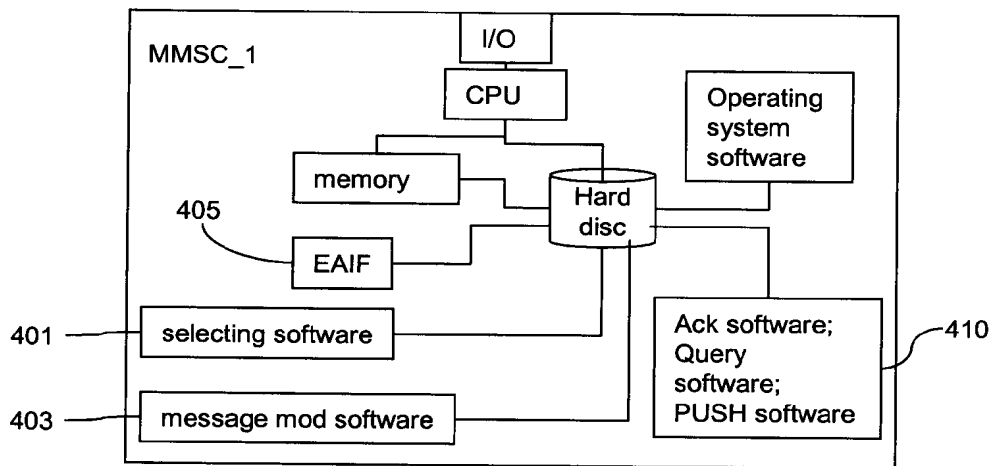
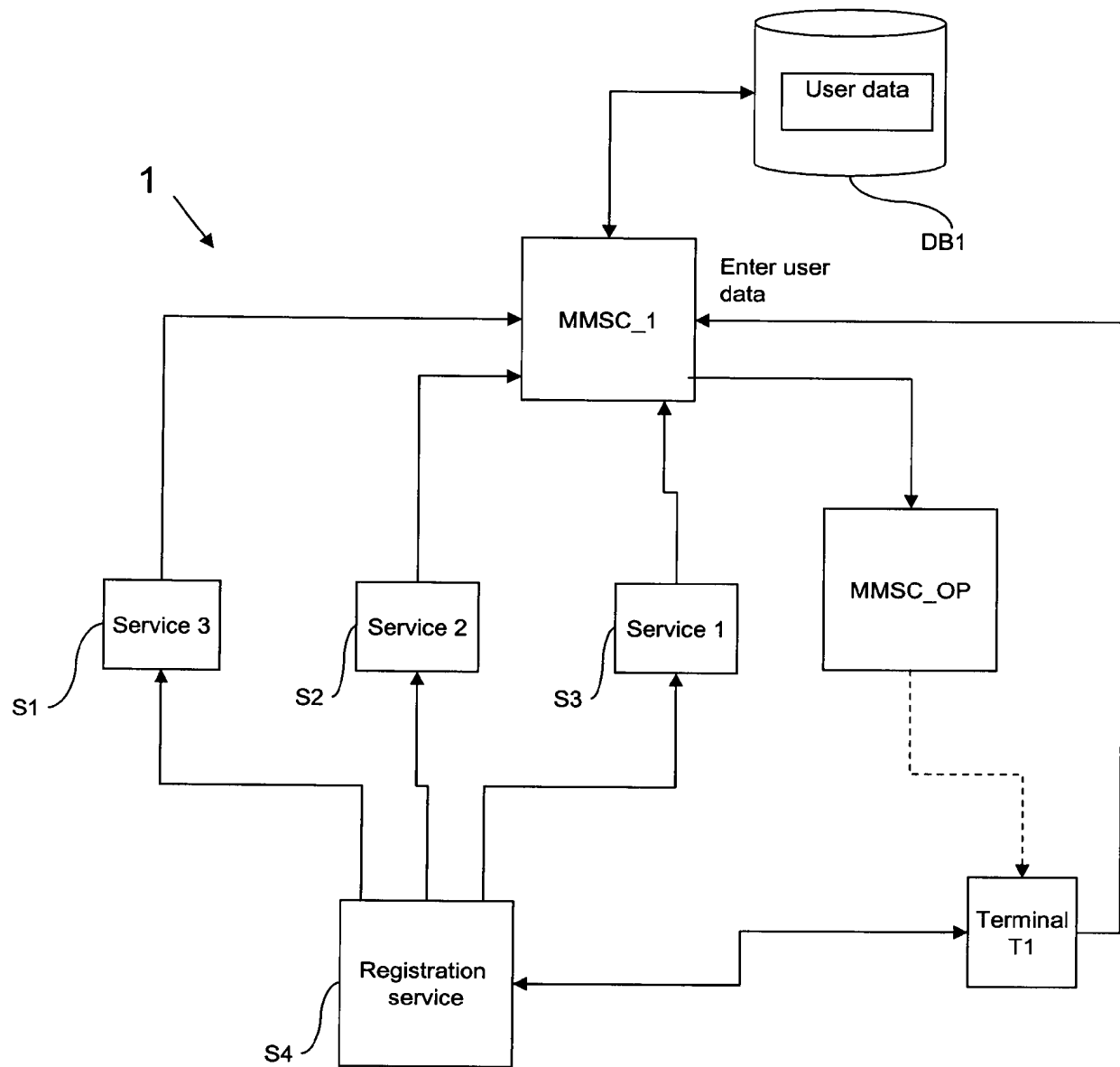
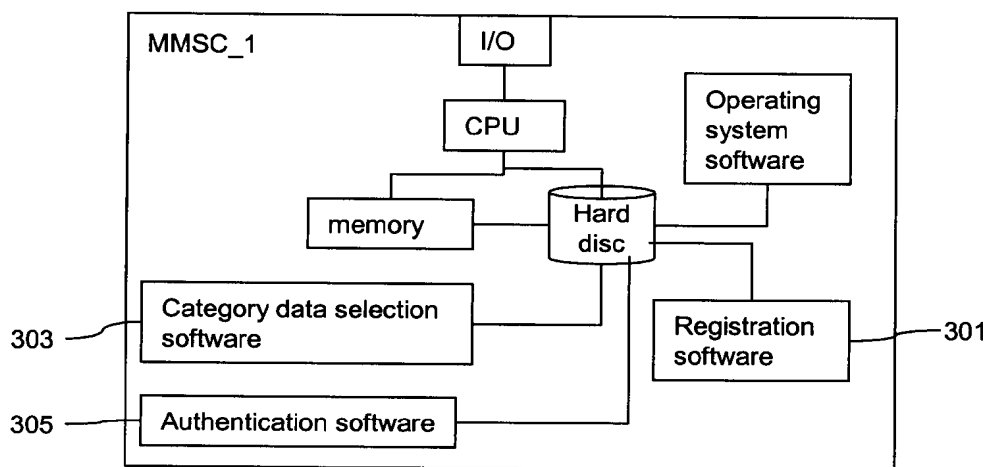
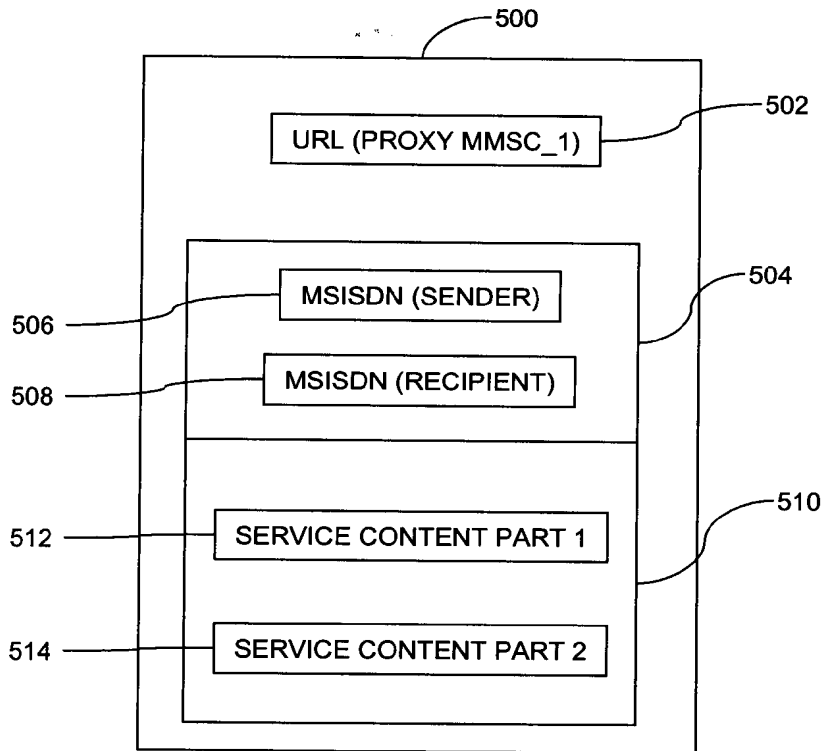
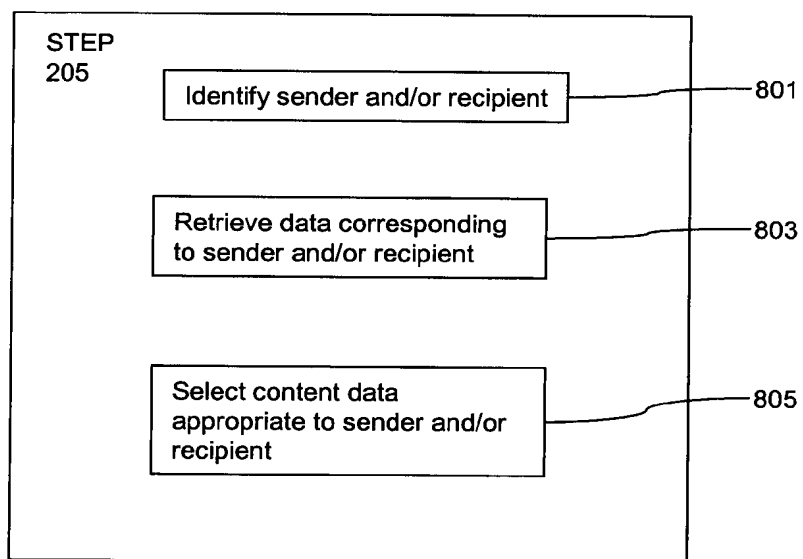


FIG. 4

**FIG. 5**

FIG. 6

FIG. 7FIG. 8

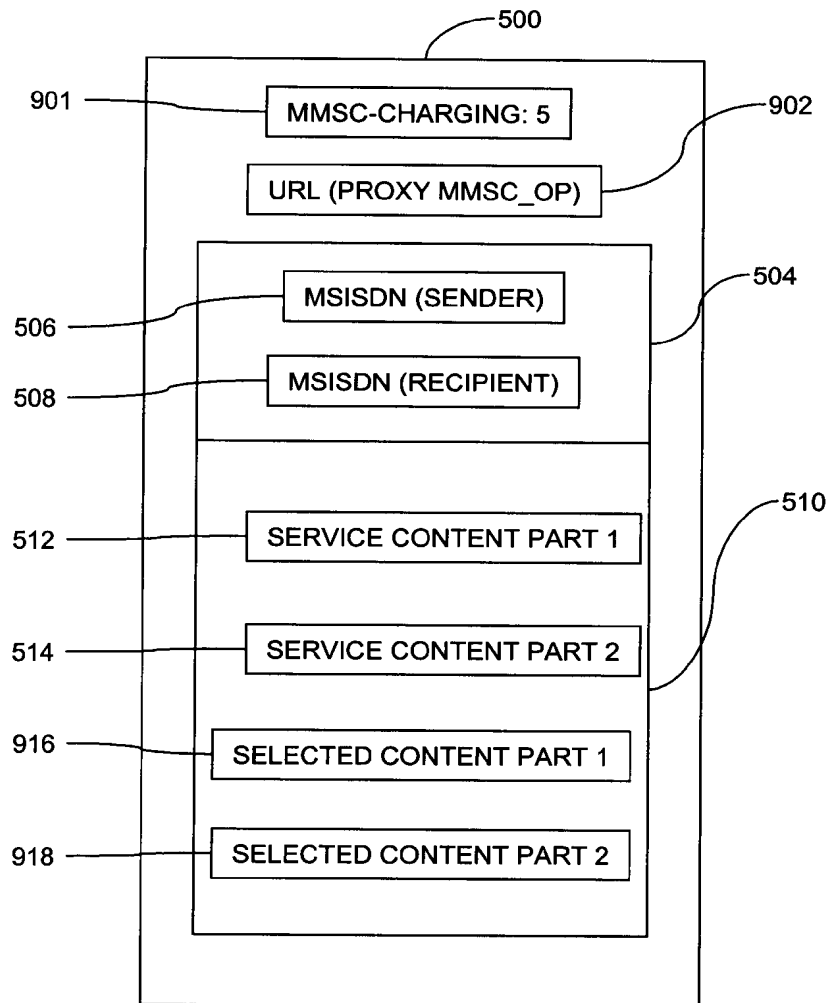


FIG. 9

9110

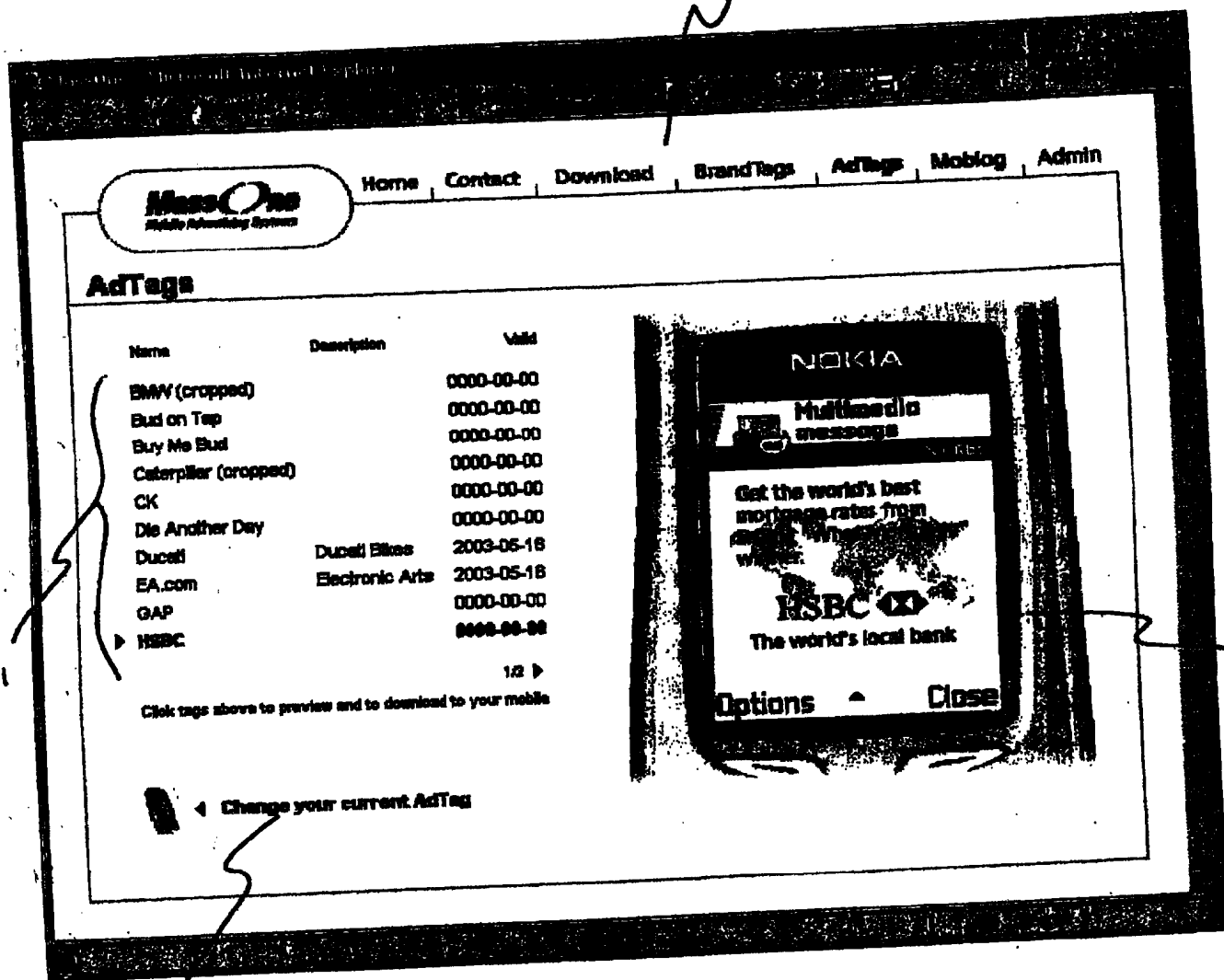
1000

1001

1003

1005

Fig. 10a



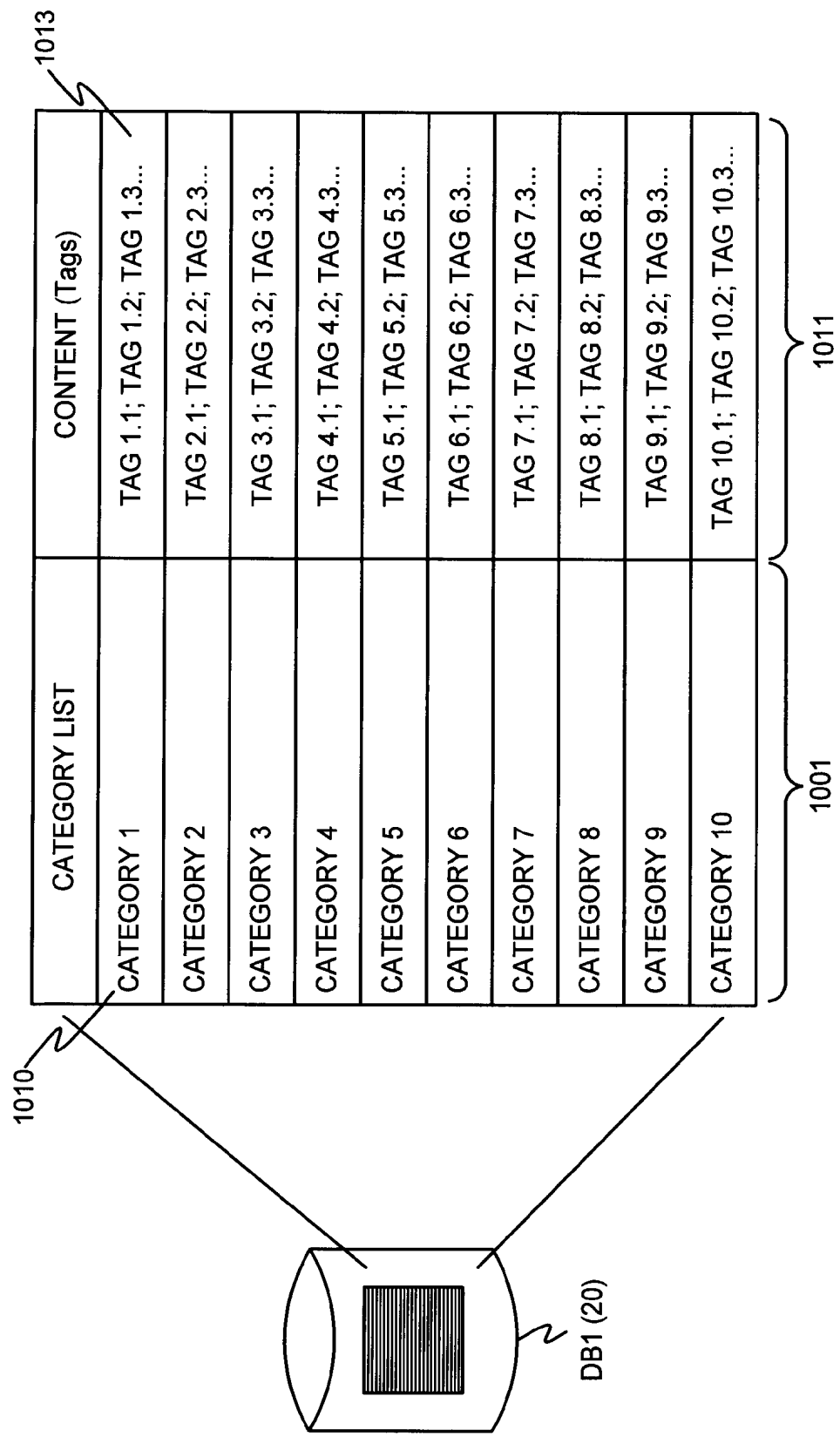


Fig. 10b

Messaging System and Service

Field of the Invention

5 This invention relates to messaging systems, in particular but not exclusively to store-and-forward messaging systems such as the Short Messaging Service (SMS) and the Multimedia Messaging Service (MMS).

Background of the Invention

10 Businesses typically target their marketing efforts in areas where user activity is high, thereby exposing large volumes of users to information relating to their products and services. Thus mediums such as the press, television, radio, subscription based services, publicly available directories, web sites, bill boards etc. are the major advertising routes at present.

15 Currently SMS messaging is a medium of choice for personal messaging. Several companies have designed systems that are intended to include advertisement information in SMS messages. For example, International patent application WO 03/015430 describes a service whereby advertisement data (including length of advertisement (number of characters), a
20 preview of the advertisement and an identifier associated with the advertisement provided by external sources) are stored on mobile terminal in a "local" store, and the user selects an advert, from the store, to accompany an outgoing message. The terminal then calculates a length available for text, and the sender is allowed to enter a message having a length up to the calculated length. An
25 outgoing message is then created, comprising the advertisement ID associated with the selected advertisement and the user's message text, and having a header indicating that the message has advertising content. The outgoing message is then sent from the terminal and received by the SMSC, which checks the header of the message; any message having an identifier corresponding to the
30 advertisement type is passed to an "ad server". The ad server processes the message, effectively selecting an advertisement from a store, creating one or

more messages that comprise the selected advertisement and creating an SMS message that can be read by the recipient's mobile phone terminal.

Since advertisements are selected by the sender from those stored locally on terminal, the terminal needs to be equipped with appropriate software, and
5 the currently selectable advertisement IDs need to be distributed to all subscribing terminals. In addition, the SMSC has to be equipped with some means of identifying these advertisement-type messages from other types of messages in order to route them to the ad server. Furthermore, since each SMS message is limited to 160 characters, the ad server quite often creates a plurality
10 of messages, which means that either the receiving terminal has to be equipped with some software that concatenates the messages together in some elegant manner (since presentation is very important with advertising), or the receiving terminal simply displays the messages separately, as is the case with non-modified SMS messages exceeding 160 characters in length. Neither of these is
15 ideal from the point of view of convenience or presentation.

MMS messaging overcomes various technical problems associated with SMS, since messages are unlimited in terms of size and content type and are compiled as HTTP messages, which means that they offer a transaction capability with possible super-distribution of content along with accuracy,
20 tracking and feedback of messages. However, despite the fact that many mobile telephones will soon have imaging and Multimedia Messaging Service (MMS) capabilities, and despite the fact that the Multimedia Messaging Service would appear to be a possible choice of messaging format for including advertising content, there is no guarantee that MMS will become as ubiquitous as SMS.
25 This is due to several reasons, firstly that there is a perceived high cost of Multimedia messaging; secondly that SMS fulfils basic personal messaging needs; and thirdly that rich media messaging requires more imagination and preparation by the creator thereof.

An object of the present invention is to provide an improved method of
30 transmitting content, such as advertising content, in messages sent through data communications networks.

Summary of the Invention

According to a first aspect of the present invention there is provided a method of modifying a message sent through a data communications network, the method comprising:

- 5 receiving, at a second network node, a message from a first network node, the message having a message body comprising first data, and transmission data identifying a destination of said message, wherein the first data have been created by an information service;
- selecting second data, in response to receiving said message;
- 10 modifying said message so as to include the selected second data in the message body thereof; and
- transmitting the modified message to said destination in accordance with the transmission data.

- 15 In one arrangement, the message sent through the data communications network is an MMS message, and the modifying step includes adding selected second data to the MMS message, and transmitting the modified message as an MMS message; and in another arrangement the message originates from the sender as an SMS message, and the modifying step includes changing the SMS message into an MMS message, which includes both the first data contained
- 20 within the original SMS message and the second data selected according to the method. In a yet further arrangement, the message sent through the data communications network is an email message, and the modifying step includes adding the selected second data to the email message and transmitting it as an email message.

- 25 In order to receive such modified messages, a recipient is required to subscribe to a service embodying the modification process. Subscription can be performed by entering data into a web page, or it can be included as a service offered by the mobile phone operator associated with the recipient's terminal, or included as part of an information delivery service. In the latter two cases
- 30 subscription is automatic. Preferably subscribers provide information about themselves, which is then used by the service to create a profile of the subscriber. Additionally or alternatively the network operators or information

delivery services can automatically pass information about the subscriber to the service.

With embodiments of the present invention outgoing messages (of any format) can be decorated with branded rich media content. This content can be tag-formatted advertising but could also be user generated or from 3rd parties. Embodiments of the invention provide advertiser sponsored terminal-to-terminal store-and-forward messaging.

The selected second data can include one or more separate entities, for example, one entity can be an animation and another, an auto-play audio clip. The entities can be combined in a single message.

Further features and advantages of the invention will become apparent from the following description of preferred embodiments of the invention, given by way of example only, which is made with reference to the accompanying drawings.

15

Brief Description of the Drawings

Figure 1 is a schematic illustration of a mobile network arranged in accordance with an embodiment of the invention;

Figure 2 is a schematic illustration of data exchanges between components of the system illustrated in Figure 1;

Figure 3 is a schematic illustration of an alternative arrangement of components of the system illustrated in Figure 1;

Figure 4 is a schematic block diagram showing message modification components of the proxy message server MMSC shown in Figures 1 and 2;

Figure 5 is a schematic illustration of a yet further alternative arrangement of components of the system illustrated in Figure 1;

Figure 6 is a block diagram showing selection components running on the proxy message server MMSC shown in Figures 1 and 2;

Figure 7 is a schematic diagram illustrating an MMS message when transmitted from a sender terminal to the proxy message server MMSC shown in Figure 2;

Figure 8 is a flow diagram showing sub-steps of the data exchanges shown in Figure 2;

Figure 9 shows content parts of an MMS message when modified according to an embodiment of the invention;

5 Figure 10a shows a Web page allowing a subscriber to select a category of interest; and

Figure 10b is a schematic illustration of category information and data corresponding thereto, as stored in the database shown in Figures 1 and 2.

10 Detailed Description of Drawings

Embodiments of the invention are concerned with modification of data messages en route for a recipient. Specifically, embodiments are concerned with modifying data messages comprising content emanating from an information source. The nature of this modification, and the criteria used to
15 make the modification, will be described in detail later in the description, but first a description of an arrangement of the components needed to provide and support the modification will be presented.

Figures 1 and 2 show an example of a data messaging system 1 within which embodiments of the invention operate. In Figure 2, the arrows indicate
20 data flows within the data messaging system 1 and the blocks indicate components thereof. This embodiment, hereinafter referred to as a message modification service, is concerned with Multimedia messages (MMS messages), but the messages could be short messages (SMS), email messages, or streamed data; the specific arrangement of the data messaging system 1 is dependent on
25 the type of message being transmitted, and alternative configurations are envisaged.

In the arrangement shown in Figures 1 and 2, the data messaging system 1 comprises a WAP gateway G_OP, which is typically a network operator's WAP gateway; a plurality of content servers S1, S2, S3 configured to generate
30 and transmit messages to a terminal T1; a services server S4 arranged to receive requests from the terminal T1 for content from one or more of the content servers S1, S2, S3; first and second store-and-forward message servers

MMSC_1, MMSC_OP, the second being a network operator's store-and-forward message server configured to store and forward messages in accordance with conventional methods; and a database DB1, arranged to store data in respect of subscribers, terminals T1, T2 and content data. Each terminal T1, T2
 5 is capable of communicating with various network devices within the data messaging system 1. The terminals T1, T2 may be wireless terminals such as mobile phones, PDAs or Laptop computers.

In one arrangement the first message server MMSC_1, together with the services server S4, is arranged to operate inside a network operator's network.
 10 The services server S4 could include software arranged to receive requests for content from the terminal T1, sent as SMS messages or as http messages. The services server S4 handles requests for content data from the terminal T1, sending the request onto an appropriate one of the content servers S1, S2, S3. The services server S4 is typically managed by the network operator, whilst the
 15 content servers S1, S2, S3 are managed by third parties. Alternatively, as shown in Figure 3, each content server S1, S2, S3 can have a services server associated therewith. In this case both the service server S4 and the content server will be managed by third parties.

In this embodiment messages that are modified by a message
 20 modification service according to the invention originate from an information service, typically an information service provided by an automated software application running on a server connected to the network, which is generally referred to herein as a content provider, and one or more content servers S1, S2, S3 are associated with a particular content provider. Each content server S1, S2,
 25 S3 is configured in such a way that MMS messages destined for a subscriber to the message modification service are sent to the first message server MMSC_1 rather than to the second (network operator's main) message server MMSC_OP. Data identifying the address of the first message server MMSC_1 is configured in each of the content servers S1, S2, S3 so that MMS messages generated by
 30 the content servers S1, S2, S3 are sent via the first message server MMSC_1 rather than directly to the second (network operator's main) message server MMSC_OP.

The services server S4 can be accessed by a user of the terminal T1 actuating a URL corresponding to the server S4 or sending an SMS message to a number associated therewith. The services server S4 comprises conventional software arranged to process requests from the terminal T1 and forward the requests to an appropriate content server. Such requests for content data can include requests for weather reports, travel information, entertainment listings and the like. The requests may be for the one-off supply of information, or may be a request for an alerting information service, which may be accompanied by some condition or criterion that will trigger the appropriate content server to send messages containing such information to the requesting subscriber. For example, a subscriber may request weather reports for a next day for a particular area to be sent at a given time each day.

The first message server MMSC_1 can be considered a “proxy” store-and-forward message server, and is located between the network operator’s WAP gateway G_OP and the network operator’s message server MMSC_OP. Referring to Figure 4, the MMSC_1 comprises standard processing components, and conventional software or hardware means for notifying, in response to receipt of an MMS, the sending party (here one of the content servers) that it has accepted the MMS; interrogating subscriber databases to determine whether the intended recipient has an MMS-compatible phone; informing the intended recipient that an MMS is available; and, in response to a request from the recipient, sending the message thereto (shown in combination in box labeled 410). In addition to these standard components, the proxy message server MMSC_1 includes selecting software 401 for selecting data to add to an incoming message (described in more detail below), message modifying software 403 for modifying the incoming message so as to include the selected data (described in more detail below); and an external application interface (EAIF) 405 that is configured to enable the proxy message server MMSC_1 to communicate with the operator’s message server MMSC_OP, specifically to forward the modified messages to the operator’s MMSC_OP in accordance with standard methods.

The selecting software 401 is arranged to identify sender (i.e. content provider details) and/or recipient information from an incoming message and select, by accessing the database DB1, the recipients' permission and preference settings in order to determine how to modify the incoming message. The
 5 modifying software 403 is arranged to modify the incoming message in accordance with input from the selecting software 401, sending the modified message to the recipient in one of a plurality of formats (e.g. SMS or MMS). Preferably the proxy (or first) message server MMSC_1 communicates with a database DB1 via an Internet virtual private network (VPN) connection, and is
 10 arranged to cache, e.g. in an SQL database, data therein so that it can operate the service even in case of VPN outages. The database DB1 can be populated with user (or subscriber) data stored by the network operator and/or with data that have been entered explicitly by the subscriber (as indicated in Figure 5). The former is advantageous because it means that entering user details is not a
 15 prerequisite to subscribing to the service, and the latter is advantageous because a detailed user profile can be used to tailor modification of a message.

In order to receive explicitly entered subscriber details the proxy message server MMSC_1 is equipped with software for receiving such subscriber data. This software includes registration software 301, category selection software
 20 303, which processes incoming category selection requests; and authentication software 305, which authenticates incoming requests for access to the category selection software. The data selection, identification and preference data are subsequently stored in the database DB1 for subsequent access by the proxy message server MMSC_1. The steps involved in setting up an account with, and
 25 making use of, the message modification service for the case where a user enters user data manually will now be described. The user enters a URL corresponding to the proxy server MMSC_1, which causes the registration software 301 to send a Web page from the proxy message server MMSC_1, via the WAP gateway G_OP, where it is modified, using conventional techniques,
 30 into a format suitable for display on the user's terminal T1, and sent to the terminal T1. The user then enters various registration details into the web page and the terminal T1 sends the details to the proxy message server MMSC_1, via

the WAP gateway G_OP. As part of the registration process, the user enters personal information details, such as name, address, terminal details (including capabilities), sex, occupation, interests, etc. and these details are stored in the database DB1. Also a part of the registration process, the registration software
5 301 sends a subscriber ID and password to enable the subscriber to subsequently access the proxy messaging server MMSC_1, e.g. to update the user's details.

In addition to storing and processing registration requests, the proxy message server MMSC_1 is arranged to display, on request, a plurality of selectable categories, from which the subscriber can select. The subscriber can
10 attempt to access the proxy message server MMSC_1 at any time, causing the authentication software 305 to authenticate or otherwise the access request. Several authentication methods are possible, one being based on the user's mobile phone number or the terminal ID (this being identifiable from, e.g. the header of a message associated with the access request), and another being via a
15 web page having data entry fields corresponding to subscriber name and password. Once authenticated, the user can select a category from the plurality, causing the selected category to be stored in the database DB1, along with other data associated with this subscriber. The categories represent subject areas of interest – e.g. types of music, football, types of drinks etc. These selected
20 category data, along with any stored user data, are then available for use by the selecting software 401 running on the proxy message server MMSC_1, as will be described in more detail below. The aspect of category selection is not essential to the invention, but is a preferred feature, since it enables the proxy message server MMSC_1 to select content that matches some aspect of the
25 recipient's interests. Further aspects of this category selection are described in more detail below.

The steps involved in modifying a message according to an embodiment of the invention will now be described, based on the assumption that a user has both subscribed to the message modification service and has requested
30 information from one of the content providers serving content from one of servers S1, S2, S3 (shown as steps 201, 202). For illustrative purposes it will be assumed that the subscriber has requested data relating to estimated departure

times of trains departing from London Victoria destined for Lyme Regis to be sent to his mobile phone at 17:30. Thus at 17:30, a MMS message comprising this information is sent by the content server S1 (step 203). Referring to Figure 7, the message is encapsulated in an HTTP POST message including HTTP header 502 which identifies with the appropriate URL that the proxy message server MMSC_1 is the HTTP message recipient. The HTTP message body includes MMS header portion 504 and MMS body portion 510. The MMS body portion 510 includes one or more service content parts 512, 514, which include information about estimated departure times.

At step 204, the MMS message 500 is received and stored by the proxy message server MMSC_1, in accordance with conventional techniques and at step 205, the selecting software 401 selects content data from the database DB1. Referring to Figure 8, this step involves performing a plurality of sub-steps: firstly identifying (sub-step 801) the sender and recipient of the message (parts 506, 508); secondly retrieving (sub-step 803) user data from the database DB1 corresponding to the recipient; and thirdly applying (sub-step 805) a filtering algorithm to the content data stored in the database DB1, using the user data retrieved at sub-step 803, in order to select content data appropriate to the received MMS. The nature of this filtering algorithm is described in more detail below.

Once the content data have been selected, the message modification software 403 modifies, at step 206, the MMS that was stored at step 204. An MMS so-modified is shown in Figure 9: the MMS is encapsulated in an HTTP POST message 900 including HTTP header 902 which identifies the network operator's message server MMSC_OP as the HTTP message recipient; the HTTP message body includes MMS header portion 504 and MMS body portion 510. The MMS message body portion 510 includes, in addition to one or more service content parts 512, 514, one or more content parts 916, 918 corresponding to the data selected at step 205. The HTTP message can also include an extension HTTP header 901, which includes charging information. At step 207 the modified MMS is transmitted to the network operator's message

server MMSC_OP, and thereafter is delivered to the recipient (T1) in accordance with conventional methods.

The aspects of data selection – step 205 (and sub-steps 801, 803, 805) – will now be described in more detail. As described above, once a user has
5 subscribed to the message modification service, he can subsequently access the proxy message server MMSC_1 and specify a category of interest, which is then used by the proxy message server MMSC_1 to modify an incoming message. In one embodiment the data to be included in the messages (sub-step 805) is branded rich media content, in which case the categories from which the
10 subscriber can select corresponds to a brand and the content is advertising content, referred to herein as a Tag element or Tag.

Figure 10a shows a Web page 1000 allowing a participating message recipient to select a category 1001, and an example of a tag 1003 within one of the categories; modification of a currently selected category can be made via
15 item 1005 on the Web page 1000. Figure 10b shows category information 1001 and content (Tags) 1011 corresponding thereto, and shows that each category 1010 has a plurality of Tags 1013 associated therewith. Once a category has been selected by the recipient, and when an MMS message is subsequently sent by a content server S1 (step 203) the selecting software 401 running on the
20 proxy message server MMSC_1 selects (sub-step 805) one or more of the Tags in the selected category to be added to the message being sent.

There are several advantages associated with this category feature of the invention, a first of which is that it provides a means of ensuring that content that is selected by the selecting software 403 is relevant to the type of content
25 delivered by the content server S1 and/or recipient's interests, thereby removing the need for this information to be contained in the messages to be modified. A second advantage is associated with the fact that the categories are stored and maintained in a central location. In the event of a change of category (which is common in the field of advertising), the change only needs to be effected at a
30 central location, rather than having to distribute data identifying the updated categories to each content server S1, S2, S3.

As described above, at sub-step 805, the selecting software 401 applies a filtering algorithm to select an appropriate Tag to add to the message. Functionally, the filtering algorithm ensures that different Tags, each in the same subscriber-selected category, are added to subsequent messages transmitted using the system, and generally that various of the different Tags available in a category are added to different messages. More specifically the filtering algorithm employs one or more of several parameters to select, from all of the Tags available in a category, the Tag or Tags to be added to the current message. These parameters include:

- 10 1. The sender identity (in this embodiment, content provider identity), as identified in the MMS message header 504 (part 506), and data associated with the sender identity, such as:
 - a. data identifying the number and/or type of Tags previously added to messages sent by the sender;
 - 15 b. whether the sender has explicitly opted out of a particular category
2. The recipient identity (here terminal T1), as identified in the MMS message header 504 (part 508) and data associated with the recipient identity, such as:
 - 20 a. data identifying a stage in the category the recipient is, as determined by the number and/or type of campaign messages previously received by the recipient;
 - b. data identifying recipient characteristics, such as age, sex, etc.;
 - c. current context of the recipient (home or at work);
 - 25 d. whether the recipient has explicitly opted out of a particular category;
3. A combination of sender and recipient identities (as per 1. and 2. above);
4. The current time and/or date;
5. Scheduling data for Tags;
- 30 6. Data relating to events occurring at that date or time (so that the selecting software 401 is arranged to access various electronically available entertainment listings, such as TV, films etc.); and

7. A random selection parameter, causing the selection to vary between messages.

In order to select Tags on the basis of on one or more of these parameters, each Tag is characterized in some manner, and indeed, such characteristics data
5 are stored in DB1 together with data identifying the Tags themselves.

Selection can also be based on the content of the MMS message itself (parts 512, 514). For example, Tags may be linked to certain words, or phrases, that appear in the message 500 – e.g. if the service content part 512 includes the word “delay” (so that the message could be, for example, “17:42 departure to
10 Lyme Regis is delayed by approximately 10 minutes”), one of the Tags linked to the word “delay” (e.g. an advertisement for a magazine shop in the station) could be selected by the selecting software 401 at sub-step 805. Additionally or alternatively selection can be based on the location of the recipient. For example, if the recipient is identified to be at a cricket match, then, assuming
15 there to be a mapping between cricket and Tags, one of the Tags linked to a cricket location could be selected at sub-step 805.

The categories displayed on the Web page 1000 for selection therefrom can be dependent on characteristics of the subscriber. For example, when subscribing to the message modification service (step 201) the registration
20 software 301 may ask the subscriber for his home, or preferred, location. As described above, these data are stored in database DB1 as user data at step 202b, so that, when a subscriber subsequently logs in to select a category, the category selection software 303 can display only those categories that match the subscriber’s location. Other parameters can be used when determining which
25 categories to display.

Whilst in the above embodiment settings corresponding to the proxy message server MMSC_1 are sent via an OTA message, the content servers S1, S2, S3 could be notified of the settings, e.g. via an email or SMS message and automatically change them.

30 As an alternative to the proxy message server MMSC_1 implementation, means arranged to carry out the present invention could be installed as a filtering application (not shown) on the operator’s message server MMSC_OP. In the

event that the processing load associated with the selecting and modification of messages becomes significant, the data messaging system 1 could also include a separate, secondary MMS message server (not shown), which is configured with the selecting software 401, message modification software 403 and the EAIF
 5 405. In such an arrangement the filtering application running on the operator's message server MMSC_OP could be arranged to pass messages that are identified to have been received from a subscriber to the service to this secondary MMS message server. In either of these arrangements the step of changing the MMSC settings on the content servers S1, S2, S3 would not be
 10 necessary.

As stated above, the arrangement shown in Figures 1 and 2, and the foregoing description is specifically tailored to the sending of MMS messages. However, the idea of modifying messages comprising content emanating from an information source can be applied to other message types, such as SMS,
 15 email and streamed data (e.g. video, multicast data).

Whilst in the embodiment above the content data are branded media content, the invention could be applied to many other types of content data. For example, a service according to the invention may be used in tracking the eventual super-distribution of multimedia content across different operators, in
 20 which case special tags (e.g. in SMIL files and watermarks in multimedia files), each being associated with an operator, could be used.

The various software components are preferably written in the Java programming language. The services server S4 could, for example, be an Apache HTTP server, and the proxy message server MMSC_1 could be a J2EE
 25 JMS Server (see <http://openjms.sourceforge.net/>).

As described above subscription to the service could be made at the time of entering into, updating or renewing a contract with a network operator; in this case the database DB1 will automatically be populated with basic user data, meaning that the registration software 301 is not required.

30 Whilst in the embodiments described above the registration, authentication and category software 301, 303, 305 are described as being run on the proxy message server MMSC_1, it will be appreciated that the software could instead

run on a dedicated server (as shown in Figure 1, where a permission/campaign server is indicated with reference numeral 22).

Claims

1. A method of modifying a message sent through a data communications network, the method comprising:
 - 5 receiving, at a second network node, a message from a first network node, the message having a message body comprising first data, and transmission data identifying a destination of said message, wherein the first data have been created by an information service;
 - selecting second data, in response to receiving said message;
 - 10 modifying said message so as to include the selected second data in the message body thereof; and
 - transmitting the modified message to said destination in accordance with the transmission data.
- 15 2. A method according to claim 1, in which said message body is created in response to conditions satisfying one or more criteria.
- 20 3. A method according to claim 1 or claim 2, in which the second data is selected on the basis of at least one parameter that is extrinsic to the first data.
- 25 4. A method according to any one of the preceding claims, in which the first data are created by an application running on a server providing said information service.
5. A method according to any one of the preceding claims including transmitting the message to a store-and-forward network node for forwarding to the, or each, recipient.
- 30 6. A method according to any one of the preceding claims, in which the first node is different to a node providing the information service.

7. A method according to any one of claims 1 to 5, in which the first node is integrated with a node providing the information service.

8. A method according to any one of the preceding claims,
5 including selecting said second data from a store of selectable data.

9. A method according to claim 8, wherein the store is one of a plurality of stores, each store being associated with a different subject and each having selectable data therein, and wherein an identifier identifying one of the
10 subjects has been received prior to receipt of the said message, the identifier thereby identifying a store from which data are to be selected.

10. A method according to claim 8 or claim 9, wherein the selectable data are specified in advance of receipt of the said message at the second
15 network node.

11. A method according to any one of the preceding claims, including selecting said second data in accordance with a time and/or data associated with the said message.
20

12. A method according to claim 11, including selecting said second data in accordance with a time of transmission or reception of the said message.

13. A method according to claim 11 or claim 12, including reviewing
25 a schedule identifying entertainment activities, and selecting said second data in accordance with an entertainment activity that overlaps, at least in part, with a time of transmission or reception of the said message.

14. A method according to any one of the preceding claims,
30 including selecting said second data from advertisement data

15. A method according to any one of the preceding claims, including identifying the information service and selecting said second data on the basis of one or more characteristics of the identified service.

5 16. A method according to any one of the preceding claims, including identifying the recipient of the said message on the basis of the transmission data and selecting said second data on the basis of one or more characteristics of the identified recipient.

10 17. A method according to claim 14, wherein the characteristics include any one of location, context, weather, age, and preference information associated with the recipient.

15 18. A method according to any one of the preceding claims, including comparing the selected data with data identifying subject matter that the recipient is not interested in, and, in the event that the selected data matches data corresponding to the identified subject matter, the message is not modified prior to transmission to the recipient.

20 19. A method according to any one of the preceding claims, including recording the number of modified messages that have been transmitted to a recipient and comparing the recorded number with a specified number of messages, and, in the event that the recorded number of messages matches the specified number of messages, the message is not modified prior to
25 transmission to the recipient.

20. A method according to any one of the preceding claims, including recording the data that have been included in the transmitted messages and comparing the recorded data with the data selected for inclusion in the
30 message, and, in the event that the recorded data match the selected data, the repeating the step of selecting data.

21. A method according to any one of the preceding claims, the method including receiving location data indicative of a location and selecting data on the basis of the location data

5 21. A method according to claim 1, including selecting data at random.

22. A method according to any one of the preceding claims, wherein the message sent through the data communications network is a short message
10 service message and the modifying step includes retrieving the first data therefrom, creating a multimedia message service message and including both the first data and the selected second data therein.

23. A method of modifying a data message during transmission
15 through a data communications network, wherein the data communications network comprises a store-and-forward network node arranged to store said data messages and forward the same to a recipient in dependence on status data corresponding to a terminal associated therewith, the method comprising:

receiving a message at a network node before said message is
20 transmitted via said store-and-forward network node, wherein the network node is different to said store-and-forward network node;

modifying the message; and

transmitting the message to the store-and-forward network node for forwarding to the recipient.

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Claims searched: All

Date of search: 21 October 2004

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 & 23 at least	WO 00/44151 A2 (SONY) - Whole document
X	1 & 23 at least	US 2002/0077130 A1 (OWENSBY) - Whole document
X	1 & 23 at least	WO 03/015430 A1 (PURPLE ACE) - Whole document
X,E	1 & 23 at least	WO 03/088690 A1 (NORTH EUROPEAN) - Whole document

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^W :

H4L

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

H04M; H04Q

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC, JAPIO